REMARKS:

Claims 1 – 8, 10, and 12 – 32 are pending in the application. Claims 1 – 6 and 17 – 32 were withdrawn from consideration. Claims 7, 8, 10, and 12 – 16 were examined and rejected. Applicants respectfully request reconsideration and allowance of this application in view of the following remarks.

Double Patenting Rejection

The Examiner provisionally rejected claims 7, 8, 10, and 12 – 16 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 4 – 8 of copending application No. 12/441,980. Applicants respectfully request that this rejection be held in abeyance or withdrawn for the following reasons.

U.S. patent application No. 12/441,980 (the "copending application") cited in the rejection was filed much after the filing date of the present application. This later application has not yet been examined, and any allowable claims of the present and copending applications are still yet to be determined. Accordingly, filing a terminal disclaimer at this point in the prosecution of the present application appears premature. The filing of such a terminal disclaimer could be appropriate once the scope of the claims in the present application and those in the copending application are finalized.

Furthermore, since the present application was filed much earlier than the copending application, Applicants respectfully request the double patenting rejection be removed, so that that the present application can be patented. Thereafter, a terminal disclaimer can be filed in the copending application, if appropriate.

At least for these reasons, Applicants respectfully request that the Examiner reconsider and withdraw the double patenting rejection or hold the double patenting rejection in abeyance until the present application issues as a patent.

Claim Rejection – 35 U.S.C. § 103

The Examiner rejected claims 7, 8, 10, and 12 – 16 under 35 U.S.C. §103(a) as being unpatentable over Kanetake (US 6,303,054) in view of Economy (US 4,467,000) in further view of Hasegawa (*Structure and Properties of Novel Asymmetric Biphenyl Type Polyimides* in Macromolecules, Vol. 32, No. 2, pp. 387 – 396, 1999) and evidenced by Wilson (Polyimide, Blackie & Son Ltd., 1990, pp. 1 – 2, scheme 1.2). Applicants respectfully request that this rejection be withdrawn for the following reasons.

The teachings of Kanetake, Hasegawa, and Wilson were previously cited against Applicants' claims. Applicants' claims are patently distinguishable from these teachings for the reasons set forth in the previous amendments and responses filed in this application, which are incorporated herein by reference. Economy is newly cited against Applicants' claims.

Applicants' independent claim 7 defines a semi-conductive aromatic amic acid composition comprising:

- an aromatic amic acid oligomer only having structural units derived from at least two aromatic tetracarboxylic acid derivatives and an approximately equimolar amount of at least one aromatic diamine;
- carbon black; and
- an organic polar solvent,

- wherein said at least two aromatic tetracarboxylic acid derivatives are a mixture of 15 to 55 mol% of asymmetric aromatic tetracarboxylic dianhydride and 85 to 45 mol% of symmetric aromatic tetracarboxylic dianhydride or a mixture of 15 to 55 mol% of asymmetric aromatic tetracarboxylic acid diester and 85 to 45 mol% of symmetric aromatic tetracarboxylic acid diester.

Applicants respectfully submit that one of ordinary skill in the art would not combine the teachings of Kanetake, Economy, Hasegawa, and/or Wilson and arrive at the presently claimed invention. There is no reason to combine Kanetake, Economy, Hasegawa, and/or Wilson to arrive at the presently claimed invention, but reasons for not combining these teachings. Accordingly, the presently claimed invention cannot be obvious over these teachings.

Differences in the Technical Fields

The (1) presently claimed invention, the (2) teachings of Economy, and the (3) teachings of Hasegawa, Kanetake, and Wilson are directed to different technologies and/or fields of technology, which are identified below.

Material 1 – The presently claimed invention is directed to an amic acid oligomer, and a semi-conductive polyimide film produced using the amic acid oligomer.

Material 2 – In contrast, the teachings of Economy are directed to a process for coating a substrate with a polyimide by using a composition comprising an amino-terminated amic acid oligomer and a tetracarboxylic acid diester.

Material 3 – On the other hand, the teachings of Hasegawa, Kanetake, and Wilson are directed to a polyimide produced using a polyamic acid.

Material 1 – Amic Acid Oligomer, and Polyimide Produced Using the Amic Acid Oligomer

Unlike the polyamic acid of Material 3, amic acid oligomers are low molecular weight compounds. Therefore, in order to obtain a polyimide film, an "addition-condensation reaction" and an "imidization reaction" (i.e., two reactions) must be suitably performed. For example, if the "imidization reaction" progresses before sufficient progress of the "addition-condensation reaction," the "addition-condensation reaction" will no longer progress. As a result, a compound of sufficiently high molecular weight cannot be obtained, and a polyimide film having suitable properties cannot be produced.

The present inventors solved the above problem, which is specific to amic acid oligomers, by combining specific components (asymmetric and symmetric aromatic carboxylic acid components) at a specific ratio, and providing a semiconductive amic acid composition that can form the desired semiconductive polyimide film. This solution of the present inventors, as identified in the present claims, is not contemplated or suggested by the combined teachings of Kanetake, Economy, Hasegawa, and Wilson.

Material 2 – Composition Comprising Amino-Terminated Amic Acid Oligomer and Tetracarboxylic Acid Diester, and Polyimide Film Produced

The teachings of Economy disclose using a composition comprising an amino-terminated amic acid oligomer and a tetracarboxylic acid diester. In particular, as the tetracarboxylic acid diester, a tetracarboxylic acid diester of a specific alcohol substituted with an electron withdrawing group, such as CF_3CH_2-OH and CH_3CH_2-O-CO-CH_2-OH, is used in the invention of Economy. A polyimide having a high molecular weight is obtained by using the tetracarboxylic acid diester of the specific alcohol. Accordingly, the polyimide of Economy

necessarily contains both an amino-terminated amic acid oligomer and a tetracarboxylic acid diester of the specific alcohol, which is distinguishable from the presently claimed invention.

Material 3 – Polyimide Produced Using Polyamic Acid

The polyamic acid solution composition is typically used as a precursor for producing a polyimide film. The polyimide is principally produced by an "imidization reaction." However, since polyamic acid has a relatively high molecular weight, a polyamic acid solution tends to have increased viscosity. A polyamic acid solution containing carbon black is particularly problematic, as described on page 2, line 18 to page 3, line 11 of the Specification.

Unobviousness

An objective of Kanetake is to produce an electrically semiconductive seamless tubular polyimide film by using a semi-conductive polyamic acid composition that has higher storage stability and that maintains a stable electrical resistivity when molded into a molded product. To achieve this objective, *a specific carbon black is added in a specific amount to a polyamic acid.*

In contrast, the *objective of Economy is to coat a substrate with a polyimide*. In order to achieve this objective, Economy *uses an amino-terminated amic acid oligomer in combination with a tetracarboxylic acid diester of a specific alcohol substituted with an electron withdrawing group*. More specifically, Economy discloses a *composition containing both an amino-terminated amic acid oligomer and a tetracarboxylic diester of a specific alcohol as essential components,* and this composition is reacted to form a polyimide film on a substrate.

Accordingly, *the technical fields of the invention of Kanetake and that of Economy are clearly different and one of ordinary skill in the art would not look to one of these technical*

fields for modification of the other. As stated above in the section entitled "Difference in the Technical Field," the technique of forming a coating film on a substrate by using a composition containing both an amino-terminated amic acid oligomer and a tetracarboxylic acid diester of a specific alcohol substituted with an electron withdrawing group is *completely different* from the technique of forming a tubular polyimide film by using a polyamic acid. At least for these reasons, Applicants respectfully submit that there is no reason or no motivation for one of ordinary skill in the art to combine the teachings of Kanetake and Economy.

Assuming arguendo, even if the teachings of Economy were applied to or combined with those of Kanetake, such a combination would only provide a polyimide film of a composition of an amino-terminated amic acid oligomer and a tetracarboxylic acid diester of a specific alcohol substituted with an electron withdrawing group. In the invention of Economy, the tetracarboxylic acid diester of a specific alcohol is a constituent feature indispensable for achieving the objective therein. Accordingly, one of ordinary skill in the art would not eliminate this constituent or indispensable feature because this would make it impossible to achieve the objective of Economy.

At least for these reasons, Applicants respectfully submit that the use of "an aromatic amic acid oligomer," which is a claimed feature of the present invention, would not have been obvious to a person skilled in the art from the combined teachings of Kanetake and Economy.

Further and as explained above, there is no reason or motivation to combine Kanetake and Economy. Therefore, there can be no reason to further combine Hasegawa and/or Wilson with Kanetake and Economy. Even if a person skilled in the art were to combine these references, the skilled person would not or could not arrive at the presently claimed invention, which is directed to a semiconductive aromatic polyamic acid composition comprising, *inter*

alia: an aromatic amic acid oligomer obtained by reacting an aromatic diamine with an aromatic tetracarboxylic acid component mixture comprising 15 to 55 mol% of an asymmetric aromatic tetracarboxylic acid component and 85 to 45 mol% of a symmetric aromatic tetracarboxylic acid component; carbon black; and an organic polar solvent.

According to the presently claimed invention, a tough polyimide film having a high yield stress and high tensile strength can be formed by reacting an aromatic diamine with an aromatic tetracarboxylic acid component mixture comprising 15 to 55 mol% of an asymmetric aromatic tetracarboxylic acid component and 85 to 45 mol% of a symmetric aromatic tetracarboxylic acid component. Applicants respectfully submit that any person skilled in the art would not have conceived of this effect from the teachings of Kanetake, Economy, Hasegawa, and Wilson either alone or combined.

At least for these reasons, Applicants respectfully submit that the inventions of present claims 7, 8, 10, and 12 – 16 would not have been obvious to a person skilled in the art over Kanetake in view of Economy, Hasegawa, and Wilson; and that the presently claimed inventions are patently distinguishable from these teachings.

Conclusion

Applicants respectfully submit that, as described above, the cited prior art does not show or suggest the combination of features recited in the claims. Applicants do not concede that the cited prior art shows any of the elements recited in the claims. However, Applicants have provided specific examples of elements in the claims that are clearly not present in the cited prior art. In view of the foregoing, the Applicants respectfully submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested.

Applicants believe that the foregoing is a complete and proper response to the Office Action mailed July 27, 2010. While it is believed that all claims in this application are in condition for allowance, if the Examiner has any comments or questions, Applicants invite the Examiner to telephone the undersigned at the below listed number to resolve any outstanding issues.

In the event this paper is not timely filed, Applicants hereby petition for an appropriate extension of time. The fee therefore, as well as any other fees that become due, may be charged to our Deposit Account No. 50-1147.

Respectfully submitted,

/ R. Eugene Varndell, Jr./

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